ABSTRACT

A wall surface of a combustion chamber (5) of an internal combustion engine (1) is divided into a low temperature wall surface (5b) and a high temperature wall surface (5a, 6a, 15a) comprising other components, and behavior models of the fuel adhering to these wall surfaces are created. By determining the fuel ratio which vaporizes from the wall surfaces and burns, and the fuel ratio which is discharged without being burnt, in respective models according to the wall surface temperatures, particularly under transient conditions, these behavior models allow the fuel amount burnt in the combustion chamber (5) and the fuel amount discharged in the exhaust gas to be precisely known.